CHAPTER 2.0
PROJECT DESCRIPTION

This chapter provides a description of the proposed project, the environmental effects of which are evaluated in *Chapter 4.0* of this EIR. The project objectives and project location are described in this chapter, followed by a description of project characteristics and a summary of project approvals that would be required.

2.1 PROJECT OBJECTIVES

The CMWD and CSD propose to implement the Master Plans in order to:

- Make facility improvements on aging water and sewer infrastructure;
- Increase capacity as necessary;
- Facilitate identified expansion needs; and
- Reduce maintenance costs.

In addition, in the case of the CSD, a project objective is to reduce the potential for wastewater overflows.

2.2 PROJECT LOCATION

The project site is located in the northern part of San Diego County within the City of Carlsbad as shown in *Figure 2-1*. All project components would be located within the Districts' boundaries, with two exceptions, as shown in *Figure 2-2*. A proposed water line upsize at the eastern end of Palomar Airport Road (component 26) would be located within the City of San Marcos, and the abandonment of nine water wells is proposed (component 32) near Foussat Road within the City of Oceanside.

2.3 PREVIOUS MASTER PLANS

Master planning for water and sewer infrastructure has been conducted previously in the City. The current plans represent updates to previous master planning documents. Summaries of recent Water and Sewer Master Plans are provided below, followed by a description of the current updates.

2.3.1 Previous Water Master Plans

The original Water Master Plan was approved in 1990 and prepared by MacDonald-Stephens Engineers. A subsequent update, prepared in 1997 by ASL Consulting Engineers, revised and updated population projections, City planning criteria, and

specific project

Figure 2-1Vicinity Map

Figure 2-2 Project Map
11x17

Figure 2-2
11x17 backup

development plans. The 1997 Master Plan Update identified the facilities required to serve existing and projected potable water demands within the service area and adjacent areas of influence. The 1997 document was not formally adopted by the City of Carlsbad, and as such, the recommendations made in the 1997 Update have been incorporated into the current 2003 Master Plan Update and are evaluated in this Program EIR.

2.3.2 Previous Sewer Master Plans

1987 Master Plan of Sewerage

The 1987 Master Plan of Sewerage was prepared by Wilson Engineering and was the first plan prepared in accordance with City of Carlsbad Growth Management Plan. In 1987, the majority of development in Carlsbad was along the coastal strip and was predominantly residential. The population of the 1987 study area was estimated at 39,000, and the ultimate population was projected to be 95,700. In 1987, the ultimate average flow from the City of Carlsbad was projected to be 13.41 million gallons per day (mgd).

1992 Master Plan of Sewerage

The 1992 Master Plan of Sewerage was prepared by Wilson Engineering and was an update of the 1987 Master Plan. By 1992, the population of the study area had increased to 65,000 and the ultimate population projection had increased to 130,000. Development was starting to progress inland and the percentage of commercial/industrial development had increased since the last Master Plan. The projected population growth curve first developed in the 1987 Master Plan was revised to increase more rapidly through the year 2000, and then flatten out to an annual growth rate of approximately 1 percent from the year 2000 to buildout. In 1992, the ultimate average flow projection was increased slightly from the 1987 projection to an estimated flow of 13.84 mgd. A CEQA Negative Declaration was prepared for this document, addressing the environmental effects of the Master Plan of Sewerage.

1997 Sewer Master Plan Update

In 1994, the City of Carlsbad adopted a new General Plan. The 1997 Sewer Master Plan Update, prepared by Carollo Engineers, incorporated the revised 1994 land use and population projections from the new General Plan. Because ultimate population projections were reduced only slightly from those used in the previous plan, an updated

capacity analysis of sewer interceptors was deemed unnecessary. The 1997 update addressed capacity analyses for various sewer trunk lines and the Encina WPCF.
Similar to the 1997 Water Master Plan Update, the 1997 Sewer Master Plan Update was not formally adopted by the City of Carlsbad. The recommendations made in the 1997 Master Plan Update have been incorporated into the current 2003 Master Plan Update and are evaluated in this Program EIR.

2.4 PROJECT CHARACTERISTICS

The 2003 Master Plan Updates for Water and Sewer were assembled using the following assumptions, data, and methods:

- Inventorying data of existing facilities;
- Examining water billing records for existing development;
- Employing the City's Growth Management Database for future development projections;
- Applying unit factors for anticipated demand;
- Using models for future infrastructure needs and sizing; and
- Calculating fees derived based on estimated construction costs

The Master Plan Updates consist of multi-year studies for facility improvements within the Districts, and identify infrastructure needs to accommodate demands from future development through City buildout. The plans include a review of existing and projected flows, capacity analyses, existing conditions assessment, Capital Improvement Program (CIP), and revisions to the sewer and water connection fee programs. They would establish a connection fee program to fund buildout water and sewer infrastructure identified as part of the planning process. Therefore, three actions are included in the overall project: adoption of the two Master Plan Updates and adoption of the connection fee program. The connection fee program would result in economic effects in that it would update the fee structure used to obtain funds for capital projects. As such, the connection fee program is not subject to CEQA and will not be discussed in the EIR. However, CEQA requires that the lead agencies make findings for certification of the project, particularly because the project requires an amendment to the City's municipal code. Accordingly, the City would make findings for the connection fee program exemption in the final environmental documentation.

2.4.1 2003 Water Master Plan Update

The 2003 Water Master Plan Update (DUDEK 2003) evaluates the existing CMWD water distribution system and its ability to meet project demands. Since the most recent Master Plan Update in 1997, a substantial number of residential, commercial, and industrial developments have been constructed and future development has been identified in the City's 2001 Growth Management Database. The 2003 document presents an update of CMWD's Water Master Plan for the planning period between 2001 and buildout of the District's service area, which is anticipated to occur by 2020. Based on the condition of many existing facilities, CMWD reviewed all infrastructure within the service area to identify necessary improvements to existing facilities, capacity improvements, and expansion needs. As stated in *Section 1.2.1*, the CIP developed in the 1997 Update is included in the 2003 Master Plan Update effort.

CIP projects (or project components) of the Water Master Plan include:

- Installation of 20 new water mains;
- Replacement or improvements to 5 existing water mains;
- Installation of two new water storage tanks, and improvements to one existing reservoir;
- Installation of four new pressure reducing stations (PRS), and conducting capacity improvements to one existing PRS;
- Installation of one new pump station and increasing the capacity of two other existing pump stations;
- One new intertie upgrade;
- Abandoning nine water wells; and
- Fire flow improvements at 14 locations.

These components are shown in *Figure 2-2* and briefly described below. The project components are detailed in *Table 2-1*, including their location, description, and project type.

TABLE 2-1
CARLSBAD MUNICIPAL WATER DISTRICT CAPITAL IMPROVEMENT PROGRAM

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
Water Master Plan Components							
1	255	From end of Marron Road east to Tamarack; PRS at Tamarack	New Watermain & PRS	NA	12-in.	6,600'	Supply new developments in LFMZ 25 & provide additional supply to 255 Zone
2	255	Parallel ex. 8" pipeline in Crestview Dr. west of El Camino Real	New Watermain	8-in.	8-in.	600'	Provides redundant supply to existing residential area
3	255	El Camino Real south from Kelly Dr. to Lisa St.	New Watermain	NA	10-in.	1,500'	Provides looping to improve pressures and reliability
4	375	Bryant Dr. from Longfellow to El Camino Real, south on El Camino Real to College and NE on College to Badger Lane	New Watermain	NA	12-in.	4,000'	Connects isolated portions of 375 Zone; provides supply from Maerkle Reservoir for existing & future development
5	490	Upsize existing 20" to 30" along El Camino Real from Cougar Dr. to Faraday Ave including Maerkle Control Valve	Watermain Replacement	20-in.	30-in.	1,500'	Larger diameter pipe reduces pressure loss during emergency supply to 550 Zone from Maerkle Dam
6	490/ 446	College Blvd from Carlsbad Village Drive south to Cannon Road, PRS	Watermain & PRS	NA	16-in.	6,330'	Increase supply capacity to 446 Zone from Maerkle Reservoir
7	490	College Blvd from future intersection with Cannon south to future Tee leading to Maerkle Reservoir	New Watermain	NA	16-in.	4,000'	Primary feed for Robertson Ranch; increase supply capacity from Maerkle Reservoir
8	375	College Blvd from Cannon Road south to Badger Lane	New Watermain	NA	12-in.	4,130'	Supply for new development & create 375 Zone loop east of El Camino Real
9	375	In Cannon Rd., from Merwin Dr. east to intersection with future College Blvd.	New Watermain	NA	12-in.	4,400'	Supply for new development & create 375 Zone loop east of El Camino Real
10	490	In College Ave, from Badger Lane north ~1200 ft, then east through future development	New Watermain	NA	36-in.	5,200'	Increase supply capacity from Maerkle Reservoir and provide a redundant supply pipeline
11	490	Connection from terminus of Project #10	New	NA	36-in.	4,100'	Increase supply from Maerkle Reservoir;

TABLE 2-1
CARLSBAD MUNICIPAL WATER DISTRICT CAPITAL IMPROVEMENT PROGRAM

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
		to Maerkle Reservoir	Watermain				Supply to new 490 development east of El Camino and Rancho Carlsbad Golf Course

TABLE 2-1 (*Continued*)

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
12	700	In future extension of Melrose Dr., from PAR north to future Faraday Rd.	New Watermain	NA	16-in.	4000'	Provide looped supply to fut. north 700 zone business park in LFMZ 16
13	700	In north El Fuerte St. extension, to future Faraday Rd.	New Watermain	NA	16-in.	2200'	Provide looped supply to fut. north 700 zone business park in LFMZ 16
14	700	In future Faraday Rd. extension, between El Fuerte St. and Melrose Dr.	New Watermain	NA	16-in.	3600'	Provides looped supply to LFMZ 16 & supply to 550 Zone from 700=>550 PRV
15	700	El Fuerte Street from PAR south to Rancho Pancho	New Watermain	NA	24-in.	5200'	Connects 700N and 700S Zones; Supply for future development
16	550	El Camino Real from Palomar Airport Road south to Cassia Road	Watermain Replacement	20-in.	24-in.	6100'	Replace existing pipeline and provide increased flow capacity
17	375	Poinsettia Lane west from Skimmer Ct. to Blackrail Rd.	New Watermain	NA	12-in.	4500'	Completes 375 Loop along Poinsettia Lane; Increase capacity to/from the D3 Reservoir
18	550	Poinsettia Road, 1100 feet east of Blackrail Rd.	Watermain Replacement	18-in.	30-in.	1100'	Increase supply to 550 Zone and D3 Reservoir
19	550	Aviara Parkway at Plum Tree north to Mariposa St, then east to Sapphire Dr.	New Watermain	NA	8-in.	3100'	Provide redundant supply to residential development

TABLE 2-1 (*Continued*)

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
20	700	Southeast corner of El Camino Real and Palomar Airport Road	New Pump Station	NA	Capacity = 2,500 gpm		Provide emergency supply to 700, 680, 510, and 580S Zones from Maerkle Reservoir PS sized to supply the ult ADD of the zones supplied.
21	680	Intersection of El Fuerte and Corintia St.	New 700 => 680 PRS	NA	NA	NA	Provide redundant supply to 680, 580S and 510 Zones
22	318	Carlsbad Boulevard from Avenida Encinas south to the District boundary	New Watermain	NA	12-in.	4900'	2-way Emergency Conn. with SDWD 240 Zone; emergency supply to 318 Zone west of I-5 & portion of the 255 Zone
23	375	Cannon Road, 1,800 feet NE from Faraday Road	New Watermain	NA	16-in.	2760'	Provide 375 supply from Maerkle Reservoir; Increased capacity for fut. development
24	550	Parallel ex. pipeline in Poinsettia Rd from Ambrosia Lane to Blackrail Rd.	New Watermain	18-in & 30-in	12-in.	2000'	Provide redundant supply to residential developments
25	375	Poinsettia Road from El Camino Real west to Skimmer Court (Poinsettia Lane)	New Watermain	NA	12-in	1300'	Parallel ex. 8-inch to increase capacity in the 375 Zone and supply from the 550 Zone
26	700	Palomar Airport Road west of SDCWA Conn. #1	Watermain Replacement	20-in.	30-in.	1500'	Reduce velocity & provide increased capacity from SDCWA #1 Connection into 700 Zone.
27	375	Construct new 375 Zone water reservoir next to existing D-3 Reservoir	New Water Reservoir	NA	Capacity = 8.5 MG		Provides additional daily storage within the distribution system for ultimate demands
28	490	Construct buried storage reservoir next to existing Maerkle Reservoir	New Water Reservoir	NA	Capacity = 15 MG		Provides additional emergency storage to meet 10-day storage criteria based on ult. demands
29	490	Maerkle Pump Station Capacity Improvements	Enlarge Pump Station	NA	Additional capacity = 10,000 gpm		Required for emergency supply from Maerkle Dam. Increase PS capacity to existing ADD
30	375	Gross Pressure Reducing Station Improvements	490=>375 PRS Upgrade	NA	NA	NA	Increase capacity of existing Gross PRS to supply new development from 490 Zone
31	490	El Camino crossing at Kelley Dr.	New watermain	NA	12-in.	300	Increase supply to the 255 Zone directly from 490 Zone thru Kelley PRS

TABLE 2-1 (*Continued*)

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
32	NA	Foussat Road Well Abandonments	Well Abandonment	NA	NA	NA	Abandon 9 wells per State standards; removal of pumps, structures & restoration of property
33	NA	Lake Calavera Reservoir Improvements	Reservoir Improvements	NA	NA	NA	Replacement of outlet tower valves & piping; Re-grade reservoir bottom
34	255	Oceanside Intertie Upgrade	Intertie Upgrade	NA	NA	NA	Valve, pipeline & meter replacements for the existing inter-tie
35	392	Install 490=>392 PRS at Cannon Rd. & College Blvd.	490=>392 PRS	NA	NA	NA	Project will take place when ex. "C" Reservoir is taken out of service
Projects Required to Increase Available Fire Flow							
F1	330	Upsize 6" and 4" pipeline in Jeanne Place to end of cul-de-sac	Pipeline Replacement	6-in.	8-in.	600'	Upsize to provide residential fire flow
F2	446	Upsize 6" pipeline in Nob Hill Drive to end of cul-de-sac	Pipeline Replacement	6-in.	8-in.	650'	Upsize to provide residential fire flow
F3	446	Upsize 6" pipeline in Holly Brae Lane and Alder Ave east of Skyline Dr.	Pipeline Replacement	6-in.	8-in.	890'	Upsize to provide residential fire flow
F4	446	Upsize 6" pipeline in Falcon Dr. east of Donna Dr. to cul-de-sac	Pipeline Replacement	6-in.	8-in.	870'	Upsize to provide residential fire flow
F5	255	Upsize 6" pipeline in Cynthia Ln & Gregory Dr, from Knowles Av to cul-de-sac	Pipeline Replacement	6-in.	8-in.	710'	Upsize to provide residential fire flow
F6	330	Upsize 6" pipeline in Tamarack Av from Highland Drive west to Adair St., and in Adair St to cul-de-sac	Pipeline Replacement	6-in.	8-in.	1250'	Upsize to provide residential and multi-family fire flow
F7	330	Upsize 6" pipeline in Highland Dr. from Yourell Ave to Ratcliff	Pipeline Replacement	6-in.	8-in.	700'	Upsize to provide residential fire flow
F8	580	Switch supply to hydrants at the Calavera Recreation Center from the 580 Zone to the 446 Zone	New Connection to Fire Hydrants	NA	NA	NA	The 580 Zone has no storage. Modify system to provide commercial/industrial fire flow to recreation center from the 446 Zone and TAP Reservoir

TABLE 2-1 (*Continued*)

LABEL	ZONE	DESCRIPTION/LOCATION	PROJECT TYPE	EXISTING DIAMETER	NEW DIAMETER	PIPELINE LENGTH	BENEFIT/COMMENTS
F9	330	Upsize 6" pipeline from Chestnut Ave at Woodland Way to the end of Woodland Way	Pipeline Replacement	6-in.	8-in.	560'	Upsize to provide multi-family fire flow
F10	255	Upsize 6" pipeline in Garfield from Chinquapin Ave to end of cul-de-sac	Pipeline Replacement	6-in.	8-in.	846'	Upsize to provide commercial/industrial fire flow
F11	255	Upsize 6" pipeline in Arland Road from Highland to Buena Vista Way	Pipeline Replacement	6-in.	12-in.	780'	Upsize to provide commercial/industrial fire flow
F12	330	Install parallel pipeline in Highland Dr. from Hillside Dr. south to Adams St.	New Watermain	6-in.	8-in.	2400'	Upsize to provide residential fire flow & redundant supply
F13	255	Install parallel pipeline in Cove Dr. from Park Dr. to end	New Watermain	6-in.	10-in.	1300'	Upsize to provide multi-family fire flow & provide redundant supply
F14	680	High elevation areas in the vicinity of Obelisco Place/Circle	Emergency pump	NA	NA	NA	Install emergency pump to boost pressures & provide the required fire flow @ 20psi

Water Pipelines and Mains

A large number of the CIP pipeline and water main projects proposed under the Water Master Plan Update would be financed via development fees from private developers as part of development projects throughout the City that are separate from the Water Master Plan Update project. As such, many of the water pipelines and water mains have been previously documented in separate CEQA documents such as EIRs, Mitigated Negative Declarations (MNDs), or Negative Declarations (NDs) as part of those development projects (refer to *Figure 2-3*). A number of mixed use and residential development projects proposed by other parties have included water line upgrades and capacity analyses as part of those projects, in order to analyze whether adequate water supply would be available to their proposed developments. As such, a number of water lines have been discussed and analyzed in separate CEQA documents, which are available for review at the City of Carlsbad Planning Department.

As indicated on *Figure 2-3,* the dashed lines indicate water lines that have been previously addressed in a separate CEQA document, or are currently being reviewed in a separate CEQA document. These include facilities that will be provided or have already been installed by private developers as part of various developments. The solid lines indicate pipelines that are proposed as part of the 2003 Master Plan Update.

Table 2-2 provides additional detail regarding prior or current environmental review of pipelines shown on the map.

Water Storage

Two new water storage tanks are proposed to accommodate water supply needs. The first tank, component 27, is proposed at the existing water tank farm along Black Rail Road near its intersection with Poinsettia Lane. This tank would be approximately 175 feet in diameter, 56 feet high, and would be the fourth tank at that facility. The proposed tank would be the same size as the three existing tanks, approximately 8.5 million gallons.

The second proposed water tank, component 28, would be a 15-million-gallon facility at Maerkle dam to supplement existing dam storage. It is proposed to be buried and would be approximately 350 feet wide and 110 feet high.

Figure 2-3
11x17 color

Figure 2-3
11x17 color backup

TABLE 2-2
RELATED ENVIRONMENTAL DOCUMENTATION FOR WATER LINES INCLUDED IN CMWD'S WATER MASTER PLAN

MAP COLOR	PROJECT NAME AND DATA	BRIEF PROJECT DESCRIPTION	STATUS OF ENVIRONMENTAL DOCUMENTATION
Lime Green	Calavera Hills Master Plan EIR 98-02 CT 00-02	Three project components: amendment of Calavera Hills Master Plan; extensions to College Boulevard and Cannon Road; and two detention basins in the Calavera Creek watershed. The Master Plan includes residential and open space uses. Sewer conveyance impacts were less than significant with mitigation incorporated. As mitigation, the project was required to participate in the fee program for financing the South Agua Hedionda Interceptor. No water distribution system impacts are identified. All proposed sewer and water conveyance facilities to be built in road right-of-ways.	Completed-- Certified 1/15/02, CC Reso 2002-016
Manilla	Robertson Ranch LFMP Zone 14 CT 02-16 MP 02-03	Information will be available in 2003.	Pending - no Draft EIR as of 12/02
Pink	Cantarini-Holly Springs EIRs LFMP Zone 15 CT 00-18 CT 00-21	1. Cantarini Ranch is a 155-acre site subdivision to allow 105 residential units, 80 apartment units, and 69 acres of open space. Infrastructure improvements include water and sewer facilities that were analyzed in the Calavera Hills Master Plan EIR (EIR 98-02). The project is reliant on construction of the South Agua Interceptor Sewer and pump station. The project is conditioned to meet the standards set forth in the Zone 15 LFMP for water and sewer; impacts are less than significant. 2. The Holly Springs project involves a 99-acre site proposed for 43 single-family lots and an 80-unit apartment project. Infrastructure improvements include water and sewer facilities that were analyzed in the Calavera Hills Master Plan EIR (EIR 98-02). The project is reliant on construction of the South Agua Interceptor Sewer and pump station. The project is conditioned to meet the standards set forth in the Zone 15 LFMP for water and sewer; impacts are less than significant.	EIRs are pending

TABLE 2-2 (*Continued*)

MAP COLOR	PROJECT NAME AND DATA	BRIEF PROJECT DESCRIPTION	STATUS OF ENVIRONMENTAL DOCUMENTATION
Violet	Kelly Ranch LFMP Zone 8 EIR 98-05	General Plan amendment and zone change for 432 acres, including a residential subdivision and associated infrastructure including roads, water, and sewer facilities. No significant effects to water and sewer facilities are identified. Future sewer service to be provided in future Cannon Road being built by the City. Water service available via existing 10-inch water main onsite. Infrastructure is assured through the mandated implementation of LFMP Zone 8.	Completed– Certified 5/11/99 CC Reso 1999-162
Tan	Carlsbad Oaks North Specific Plan LFMP Zone 16 EIR 98-08	The Specific Plan proposes an industrial park, Faraday Avenue Road Extension, El Fuerte Street Extension, and construction of Reaches SAHT1 A through D of the South Agua Hedionda Interceptor Sewer to serve the project as well as industrial properties to the east. The environmental review for the original design of the project identified significant impacts resulting from implementation of water and sewer facilities due to the need for the sewer interceptor to cross Agua Hedionda Creek and undisturbed habitats. However, the City Council ultimately approved an alternative design for the project which resulted in no significant impact to habitats.	Completed– Certified 10/8/02 CC Reso 2002-298
Sage Green	Carlsbad Raceway Business Park MND CT 99-10	Subdivision of 146.3-acre parcel into 25 industrial lots and 3 open space lots. The project would comply with LFMP Zone 18 to ensure the timely provision of public facilities including water and sewer infrastructure; impacts are less than significant.	Completed– Approved 12/04/01 CC Reso 2001-351
Sage Green	Palomar Forum Business Park MND CT 99-06	13-lot industrial subdivision of 70.6-acre parcel, involving a General Plan amendment and zone change. Proposed use includes a wildlife habitat corridor. No impacts were found to be significant and unmitigable.	Completed– Approved 12/04/01 CC Reso 2001-352
Peach	Bressi Ranch LFMP Zone 17 EIR 98-04 CT 00-06	The Master Plan proposes 623 residential units, 2,160,500 square feet of industrial space, 130,000 square feet of commercial, and 138,000 square feet of community facilities. Offsite placement of a sewer line south of the project might also be required, to be located within the future right-of-way of Alicante Road. One California gnatcatcher pair would be significantly affected by the construction of Alicante Road. The road area is part of the HCP/OSMP that was previously approved through the Section 10 (a) FESA process. No additional mitigation is required. The specific acreage of impacts to biological resources resulting from the installation of the water and sewer lines is not provided. Impacts were found to be significant for biological	Completed– Certified 7/9/02 CC Reso 2002-205

TABLE 2-2 (*Continued*)

MAP COLOR	PROJECT NAME AND DATA	BRIEF PROJECT DESCRIPTION	STATUS OF ENVIRONMENTAL DOCUMENTATION
		resources, and were mitigated to less than significant levels. Water and sewer infrastructure is assured through the mandated implementation of LFMP Zone 17. No significant effects to water and sewer would result.	
Aqua Green	Villages of La Costa LFMP Zones 10 and 11 EIR 98-07 CT 99-03	Development of portions of three villages including 2,390 residential units, business park, school, park, two community facilities, road improvements, and infrastructure. The infrastructure includes water and sewer lines to be implemented in four phases, and a water pressure regulating station at the corner at El Camino Real and Poinsettia Lane. The projected demand for water would have a significant water supply and storage effect. Mitigation includes payment of major facilities fees, provision of a 30-inch water line in Poinsettia Lane and 12-inch line in Corintia Street, implementation of conservation measures, and provision of adequate fire flow facilities. With mitigation, impacts are reduced to less than significant. Existing sewer facilities would be able to accommodate the project; impacts would not be significant. (Note: the size of that water line was later reduced to 16 inches. Thus, the Master Plan identifies it as a 16-inch line.)	Completed – Certified 10/16/01 CC Ordinance Nos. NS604 and NS605
Light Brown	De Jong Property MND for CT 98-05	29-unit residential subdivision including 2 open space lots. The project is consistent with LFMP Zone 20 standards and requirements for water and sewer infrastructure provision; all impacts were less than significant with mitigation.	Completed -- Approved 5/11/99 CC Reso 99-161

Improvements to the existing reservoir at Lake Calavera (component 33) are also included in the Master Plan. However, due to a more immediate need to prevent potential flooding and related issues, the City wanted to avoid delay and is currently preparing a separate EIR for this project.

Pressure Reducing Stations

A PRS provides a method of serving water between different pressure zones, from a higher pressure zone to a lower. Four new stations are proposed under the 2003 Master Plan Update. The size of the pressure reducing stations has not yet been determined, but each would be approximately 8 by 12 feet and could possibly be located underground. The facilities would include sump pumps and pressure reducing valves. Two of the stations (components 6 and 35) would be located within the Calavera Hills Master Plan area, near future Cannon Road east of El Camino Real.

The third PRS (component 21) is planned for the southeast part of the City along El Fuerte Street, and the fourth (component 1) is located near future Marron Road in the northern section of the City. Also, one existing PRS (component 30) is proposed to be upsized with increased capacity to supply new development in the 375 zone. This PRS is located east of El Camino Real just south of the Cantarini-Holly Springs residential development projects.

Pump Stations

One new pump station (PS) is proposed as component 20. It would be located at the southeast corner of the El Camino Real/Palomar Airport Road intersection. The pump station would include three pumps and would roughly be 15 by 20 feet in size.

Two PS projects (components 29 and 37) would involve conducting capacity improvements to existing stations. Component 29 is required for emergency supply from Maerkle Dam, and component 37 would also include installation of an emergency generator and other onsite improvements.

2.4.2 2003 Sewer Master Plan Update

The 2003 Sewer Master Plan Update (DUDEK 2003) represents an update of the CSD's Sewer Master Plan for the planning period between 2001 and buildout of the District's service area (anticipated by 2020). In summary, the 2003 Update includes tasks to

document existing facilities, project ultimate average wastewater flows, estimate existing and ultimate peak flows, and develop a computer model to perform an existing and ultimate system capacity analysis. The outcome of these analyses is a recommended long-term CIP for improvement of existing wastewater collection and treatment facilities. The 2003 Update also recommends a sewer connection fee to finance the recommended facilities. In the 2003 Master Plan Update, ultimate sewer flow projections are based on the City's recently compiled Growth Management Database, which projects the number of additional single and multi-family units and the number and size of non-residential buildings at buildout.

The 2003 Sewer Master Plan Update is to include capacity improvements to the existing sewer collection system's wastewater interceptors. The components of the 2003 plan would involve rehabilitation or replacement activities for existing sewer pipelines and forcemains, improvements to existing lift stations, and removing several lift stations. Refer to *Figure 2-2* for the location of these proposed facilities.

The previously prepared Master Plan (Carollo 1997) addressed improvements and capacity analyses of trunk sewers, and capacity summary of the Encina WPCF. No CEQA documentation was prepared for the 1997 report; as such, the Program EIR will address the effects of implementing the projects recommended in the 1997 study, as well as impacts resulting from implementation of the 2003 Master Plan Update. *Table 2-3* shows the proposed projects to be implemented as part of the 2003 project.

Vista/Carlsbad Interceptor Capacity Improvements

As shown in *Figure 2-2*, projects proposed in the 2003 Sewer Master Plan Update's recommended improvements include those related to the Vista/Carlsbad Interceptor. The 2003 Update recommends replacement of existing interceptor lines with new 42-inch lines and replacing a parallel forcemain. These activities would all be conducted within existing alignments in roadways; no new lines are proposed.

The existing Buena Vista Lift Station forcemain (component 30) consists of parallel 24- and 16-inch diameter pipelines for most of its length. It is recommended that a new 24-inch diameter forcemain replace the 16-inch main and parallel the existing 24-inch main for its entire length. In addition to increasing the station capacity, the new parallel forcemain would reduce peak velocities and increase reliability.

TABLE 2-3
PROJECTS IDENTIFIED IN THE 2003 SEWER MASTER PLAN UPDATE

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
1	Avenida Encinas Gravity Sewer	Along north side of Lanakai Mobile Home Park in western Carlsbad, between Carlsbad Boulevard and Avenida Encinas	Construct approximately 1,000 feet or 8-inch gravity sewer. The existing forcemain releases unacceptable levels of hydrogen sulfide gas resulting in numerous odor complaints and deterioration of the gravity sewer system.
2	North Agua Hedionda Interceptor Rehabilitation – West Segment-Cove Drive to Hoover Street	North bank of Agua Hedionda Lagoon and Creek	! Design and construct access road to facilitate gravity sewer maintenance from El Camino Real to Park Drive (approximately 5,700 feet); enhancement include public trail improvements. ! Design and construct erosion protection for access road and existing gravity sewer where needed. ! Evaluate sewer realignment to relocate access holes away from creek to prevent inundation, reduce inflow, and improve access for maintenance. ! Assess all access holes, replace and rehabilitate as necessary. ! Conduct environmental survey and prepare documents necessary to obtain permits. ! Design and construct mitigation site. Implementation of the project will reduce the potential for accidental sewage spills to the lagoon and creek, avoid inflow to the sewer, and allow for maintenance vehicles to access the sewer.
3	North Agua Hedionda Interceptor Rehabilitation – East Segment El Camino Real to Kelly	North bank of Agua Hedionda Lagoon and Creek	Rehabilitate/replace 21 manholes
4	North Agua Hedionda Trunk Sewer -- Reach NAHT1A	Along the north side of Tamarack Avenue from El Camino Real to Calavera Hills Treatment Plant	Remove existing forcemain and construct 5,000 feet of 8-inch gravity sewer pipeline. When the Calavera Hills Treatment Plant was originally constructed, there was no provision for extending a gravity sewer line downstream of the plant. When the decision was made not to activate the plant, the sewer mains discharging into the plant site were connected to forcemain pipe and sewage flows by gravity towards El Camino Real.

TABLE 2-3
PROJECTS IDENTIFIED IN THE 2003 SEWER MASTER PLAN UPDATE

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
			The existing forcemain is not sloped properly to handle gravity flow and lacks the necessary access holes for proper maintenance. Removal of the existing forcemain and construction of a new gravity line will complete this portion of the sewer master plan.

TABLE 2-3 (*Continued*)

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
5	North Batiquitos Interceptor Rehabilitation	North side of Batiquitos Lagoon from El Camino Real west to North Batiquitos Lift Station	During high rainfall periods, the Batiquitos Lagoon level rises above the existing access road and access hole covers. The project will design a new access road to the sewer and raise access hole covers to a higher elevation where required. To avoid accidental sewage spill, reduce inflow to the sewer, and allow for maintenance vehicles to access the sewer.
6	El Camino Sewer	In El Camino Real from Tamarack Avenue to Chestnut Avenue	Construct 4,200 feet of 8-inch gravity sewer.
7	Sewer Lift Station Repairs/ Upgrades	Terramar, Villas, and Gateshead Lift Stations	Various improvements.
8	Forest Gravity Sewer and Lift Station	Along Forest Avenue at Highland Drive	Remove sewage lift station and construct gravity sewer. Existing lift station does not meet current electrical and ventilation safety requirements, and wet well and mechanical equipment need replacement. Sewer pipeline eliminates need for upgrade of facility.
9	Home Plant Lift Station	Home Plant Lift Station near Carlsbad Boulevard and northern city limits	Replace pumps, upgrade wet well ventilation system and reconstruct influent sewer manhole. Field review shows that sand accumulating in the wet well is due to undersized pumps. Installing larger pumps and completing other upgrades will reduce the maintenance costs at the pump station.

TABLE 2-3 (*Continued*)

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
10	La Costa Meadows Sewer Extension	In La Costa community from the end of Chorlito Street to El Fuerte Street	Removal of the La Costa Meadows Lift Station, which is an LWD-owned facility, and extension of an eight-inch gravity sewer approximately 600 feet to the new gravity sewer constructed in El Fuerte Street by the Rancho Carrillo developer. The La Costa Meadows Lift Station was constructed to temporarily divert sewage flows into existing Leucadia County Water District (LCWD) facilities. The diversion was required due to a lack of City sewer facilities located downstream of the La Costa Meadows project within the Rancho Carrillo Valley. The diversion agreement between the City and LCWD required the removal of the lift station and connection to City sewer facilities when the downstream properties were developed and new sewer facilities extended up El Fuerte Street. The needed downstream sewer collection facilities were recently constructed as part of the Rancho Carrillo project.
11	La Golondrina Sewer Extension	In the La Costa community from the end of La Golondrina Street south of Poinsettia Lane	Removal of the La Golondrina Lift Station and extension of an eight-inch gravity sewer approximately 1,000 feet to the new gravity sewer constructed in Poinsettia Lane by the Rancho Carrillo project developer. The lift station was constructed to temporarily divert sewage flows into existing Leucadia County Water District (LCWD) facilities. The diversion was required due to a lack of City sewer facilities located downstream of the Ponderosa Homes project within the Rancho Carrillo Valley. The diversion agreement between the City and LCWD required the abandonment of the lift station and connection to City sewer facilities when the downstream properties were developed and new sewer facilities extended up Poinsettia Lane.
12	Poinsettia Sewage Lift Station Odor and Noise Abatement	2425 Poinsettia Lane	Installation of an activated carbon absorption odor control system, including ducting, to treat foul air from the lift station wet well to reduce corrosion and control odor emissions, and sound enclosures for outdoor fans. The existing lift station emits odors that can reach future developments in close proximity to the lift station. In addition, uncovered supply and exhaust fans generate noise that reach or exceed 60 dBA at the fenceline. Control of the odors and reduction of noise will promote

TABLE 2-3 (*Continued*)

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
			"good neighbor" policy and a higher level of service to adjacent residents.
13	Sewer Line Refurbishment/ Replacement	Various	Replace or refurbish various sewer lines older then 30 years.
14	Vista/Carlsbad Interceptor Reaches VC1 and VC2	East of Buena Vista Lagoon and south of SR-78	Rehabilitation of 9,430 feet of 36-inch pipeline and 25 manholes.
15	Gateshead Lift Station	Located on Gateshead Road just north of the Robertson Ranch development south of Tamarack Ave	Remove Gateshead Sewer Lift Station. 200 feet of 8-inch lines to be installed adjacent to lift station to connect to residential development projects.
16	Vancouver Lift Station	At the terminus of Vancouver Street north of Carlsbad Village Drive	Remove Vancouver Lift Station and construct 300 feet of 8-inch gravity sewer.
17	Simsbury Lift Station	On Simsbury Court in the northeast section of the City, within the Calavera Hills development project	Remove Simsbury Lift Station and construct 500 feet of 8-inch gravity sewer.
18	Villas Lift Station	North of Carlsbad Village Drive within the Calavera Hills development project	Remove Villas Lift Station. 2,000 feet of 8-inch lines to be installed adjacent to lift station to connect to residential development projects.
19	Woodstock Lift Station	On Woodstock Street, south of Tamarack Avenue adjacent to the Calavera Hills development project	Remove Woodstock Lift Station. 400 feet of 8-inch lines to be installed adjacent to lift station to connect to residential development projects.
20	Faraday #14 (Upper) Lift Station	Along Faraday Ave just west of College Blvd	Remove Faraday #14 Lift Station and connect to existing gravity sewer.
21	Faraday #10 (Lower) Lift Station	Along Faraday Ave south of Kelly Ranch	Remove Faraday #10 Lift Station and connect to existing gravity sewer.
22	North Batiquitos Lift Station	East of I-5 and north of the Batiquitos Lagoon	Various improvements including installation of gas detectors and float switch modifications.
23	Carlsbad trunk	Vancouver and Simsbury lift	Convey flows using 2,000 feet of 8-inch pipeline from Vancouver and

TABLE 2-3 (*Continued*)

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
	Sewer Reaches VCT1A, VCT1B, VCT1C	stations	Simbsury Lift Stations to Vista/Carlsbad Interceptor.
24	Master Plan Update	--	Prepare report.
25	Sewer Monitoring Program	Various	Monitor sewer flows.
26	Sewer Access Hole Rehabilitation	Various	Rehabilitate/replace manholes older than 30 years.
27	Sewer Connection Fee Update	--	Prepare report.
28	Vista/Carlsbad Interceptor Reach VC3	south of SR-78 and east of Buena Vista Lagoon	Replacement of existing interceptor lines with 3,350 feet of new 42-inch lines.
29	Buena Vista Lift Station upgrade	Along the southeast shore of Buena Vista Lagoon near Marron Road	Upgrade lift station from 14,000 to 18,000 gallons per minute. Pumping units were last replaced at the Buena Vista Lift Station in 1994. As part of this upgrade, pumps would be changed, but no physical changes to the lift station's existing footprint would result.
30	Buena Vista Lift Station forcemain	Along the southern shore of Buena Vista Lagoon east of I-5	24-inch diameter forcemain to replace the existing 16-inch main and parallel the existing 24-inch main for its entire length.
31	Vista/Carlsbad Interceptor Sewer Reach 11B	Cross over (in a bridge structure) Agua Hedionda Lagoon in existing NCTD right-of-way.	Replace existing Reach 11B and bridge with 915 feet of 54-inch pipeline and new concrete bridge.
32	Agua Hedionda Lift Station	South of the Agua Hedionda Lagoon adjacent to the Cabrillo Power Plant	Upgrade and slightly relocate lift station within existing property. Project includes five new pumping units for a firm pumping capacity of 36 mgd, and a new headworks, wet well, control building, 2.5 MG emergency storage basin, and 200 feet of 36-inch diameter forcemain.
33	Lower Vista/Carlsbad Interceptor, Reaches VC13, VC14, and	Parallel to railroad tracks from the Agua Hedionda Lagoon south to Encina WPCF	Interceptor Replacement: 9,890 feet of 54-inch pipeline.

TABLE 2-3 (*Continued*)

PROJECT COMPONENT NUMBER	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION/NEED
	VC15		
34	South Agua Hedionda/Kelly Ranch Lift Station	Along Cannon Road within Kelly Ranch	Temporary lift station to be replaced with permanent South Agua Hedionda Lift Station and new 5,380 feet of 14-inch forcemain.

Lift Stations

The 2003 Update recommends improvements to 8 existing sewer lift stations and the removal of 10 lift stations, as shown in *Table2-3* and *Figure 2-2*. At this program level of analysis, it is assumed that several lift stations would be physically removed rather than abandoned. As subsequent project-level plans become more defined, the CSD may determine to abandon some of the lift stations. Removal is generally a more impactive process on the environment than is abandonment, and as such, this Program EIR will analyze the worse-case scenario for purposes of environmental analysis. As part of the removal process, additional sewer lines are necessary to be installed in the immediate area surrounding the Gateshead, Villas, Woodstock, and La Golondrina lift stations to connect the sewer system to residential development projects.

Other Lift Station Improvements Identified in the 1997 Master Plan

A detailed survey of the sewer lift stations with respect to the condition, code compliance, standby power, and capacity was performed as part of the 1997 report. A summary of the recommended improvements that have not yet been constructed is provided in *Table2-3* and shown on the map on *Figure 2-2*. All of the recommended improvements would be installed within the footprints of the existing lift stations.

Encina Water Pollution Control Facility Projects

The 2003 Update includes a sewer connection fee update. The connection fee update includes 11 projects that would be implemented separately by the Encina Wastewater Authority (EWA) as lead agency. As one of six EWA member agencies, the City of Carlsbad is responsible to contribute their cost share of the proposed sewer projects, which would be funded through the connection fee program. The EWA projects are provided in this document to disclose the complete project description of the 2003 Update; however, EWA as lead agency is responsible for conducting separate environmental review for these projects. Refer to *Table 2-4* for a list of the 11 EWA projects. All 11 projects are located on Encina WPCF property at 6200 Avenida Encinas.

TABLE 2-4
PROJECTS PROPOSED AT THE ENCINA WATER POLLUTION CONTROL FACILITY

ENCINA WATER POLLUTION CONTROL FACILITY PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION/NEED
1	Building Improvements	To construct or improve existing building facilities including additional office, employee locker facilities, and expanded laboratory facilities.
2	Various Capital Improvements	To upgrade the existing sewer treatment plant
3	Capital/Planning Services	Ongoing capital planning for future projects at the Plant are necessary to assure that Growth Management Standards for sewer treatment capacity will continue to be met.
4	Cogeneration Project	Upgrade and program electrical generators which power the blowers within the sewer treatment facility. Project is proposed to conform with mandated air quality regulations and to ensure the lowest power price rates from SDGE.
5	Flow Equalization Project	Construction of a reservoir/tank to retain flows which exceed the capacity of the ocean outfall line. Retained flows would be released during periods of low flow. The retention facility may double as a recycled water reservoir.
6	Phase IV Expansion Debt Service	Expansion of the Encina WPCF to increase treatment capacity from 22.5 mgd to 36 mgd of raw sewage. Required to meet Growth Management Standards.
7	Phase V Expansion	Expand the Encina WPCF to buildout for the treatment of 45 to 60 mgd of wastewater. The project would provide for ultimate wastewater capacity of the Carlsbad Sewer District.
8	Phase V Expansion - Interim Capacity	Construction of necessary interim improvements to provide additional capacity to meet current needs. The interim improvements would include primary enhancement facilities and fourth aeration basin facilities. Required to assure that Growth Management Standards for sewer treatment capacity will continue to be met.
9	Plant Rehabilitation	Annual machinery rehabilitation to ensure efficient operating of the Encina WPCF.
10	Pump Station Services	The project consists of a review of the possible methods to develop active monitoring of the various sewer pump stations which pump sewage from outside agencies. Development of an active interface to the pump station would provide more accurate and reliable measurement of the City's treatment capacity. Required to assure that Growth Management Standards for sewer treatment capacity will continue to be met.

ENCINA WATER POLLUTION CONTROL FACILITY PROJECT NUMBER	PROJECT NAME	PROJECT DESCRIPTION/NEED
11	Technology Master Plan	Development of a master plan to evaluate new treatment technologies for possible incorporation into the Encina WPCF. Required to assure that Growth Management Standards for sewer treatment capacity will continue to be met.

2.4.3 Standard Design Features and Construction Measures

For all project components, design would be undertaken in conformance with applicable codes and regulations, including the Uniform Building Code (UBC) and *Standards and Specifications for Public Works Construction* (2000), commonly referred to as "The Greenbook," a public works standards manual. The lead agencies have incorporated numerous project design features and construction measures into the project design that are included in an effort to reduce the potential for environmental effect, as shown in *Table 2-5*. These measures represent the minimum measures that would be undertaken.

TABLE 2-5
SUMMARY OF STANDARD PROJECT DESIGN FEATURES AND CONSTRUCTION MEASURES

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
Aesthetics	• Demolition debris shall be removed in a timely manner for off-site disposal. • Tree and vegetation removal shall be limited to those depicted on construction drawings. • Construction lighting shall be shielded or directed away from adjacent residences. • All roadway features (signs, pavement delineation, roadway surfaces, etc) and structures within State and private rights-of-way will be protected, maintained in a temporary condition, or restored. • Aboveground components such as pump stations should be designed with exterior fencing, paint, and vegetative screening to reduce aesthetic impacts in visually sensitive areas.
Air Quality	• Water or dust control agents shall be applied to active grading areas, unpaved surfaces, and dirt stockpiles as necessary to prevent or suppress particulate matter from becoming airborne. All soil to be stockpiled over 30 days shall be protected with a secure tarp or tackifiers to prevent windblown dust. $ Covering/tarping will occur on all vehicles hauling dirt or spoils on public roadways unless additional moisture is added to prevent material blow-off during transport. • Grading and other soil handling operations shall be suspended when wind gusts exceed 25 miles per hour. The construction supervisor shall have a hand-held anemometer for evaluating wind speed. • Dirt and debris spilled onto paved surfaces at the project site and on the adjacent roadway shall be swept or vacuumed and disposed of at the end of each workday to reduce resuspension of particulate matter caused by vehicle movement. During periods of soil export or import, when there are more than six trips per hour, dirt removal from paved surfaces shall be done at least twice daily. • Disturbed areas shall be revegetated as soon as work in the area is complete. • Electrical power shall be supplied from commercial power supply wherever feasible, to avoid or minimize the use of engine-driven generators. • Air filters on construction equipment engines shall be maintained in clean condition according to manufacturers' specifications. $ The construction contractor shall comply with the approved traffic control plan to reduce non-project traffic congestion impacts. Methods to reduce construction interference with existing traffic and the prevention of truck queuing around local sensitive receptors shall

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
	be incorporated into this plan. • Staging areas for construction equipment shall be located as far as practicable from residences. • Trucks and equipment shall not idle for more than 15 minutes when not in service.

TABLE 2-5 (*Continued*)

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES

TABLE 2-5 (*Continued*)

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
Biological Resources	• Native vegetation disturbance shall be limited to the construction zones as indicated by flagging or fencing. Prior to the commencement of construction, the limits of grading shall be clearly delineated by a survey crew prior to brushing, clearing, or grading. The limits shall be checked by a biological monitor before initiation of construction grading. The contractor(s) shall be responsible to mitigate impacts to sensitive biological resources beyond those identified in this report or any subsequent reports that occur as a direct result of construction activities. • Activities shall be prohibited within drainages (other than those that may occur within an approved construction zone), including staging areas, refueling areas, equipment access, and disposal or temporary placement of excess fill. • Construction in or adjacent to sensitive areas shall be appropriately scheduled to avoid sensitive and/or breeding seasons and to minimize potential impacts to biological resources. • Erosion and siltation into off-site areas during construction shall be minimized. The contractor shall prepare an erosion control plan in accordance with applicable local code requirements. The construction supervisor shall be responsible for ensuring that the erosion control plan is developed and implemented. • Appropriate post-construction fencing and signage shall be installed to prohibit access and avoid potential impacts to sensitive resources adjacent to project sites. • To the extent feasible, all construction activities adjacent to coastal sage scrub habitat shall occur between August 15 and March 1. • If construction activities must extend beyond March 1, and the activities are adjacent to or within 500 feet of a gnatcatcher nest, then noise reduction measures (*e.g.*, temporary noise and line-of-sight barriers) shall be incorporated to ensure that noise levels do not exceed 60 dBA Leq. • If construction occurs during the raptor breeding season, a qualified biologist should conduct a pre-construction survey of the project site and surrounding habitat to determine whether there are active raptor nests within that area. If an active nest is observed, a buffer will be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer will be at least 500 feet wide and will be in effect as long as construction is occurring and until the nest is no longer active. • Temporary fencing will be used in all locations of the project where proposed grading or clearing would be within 100 feet of proposed biological open space. Fencing will be placed on the impact side and will result in no vegetation loss within adjacent open space. All temporary fencing will be removed only after the conclusion of all grading, clearing, and construction. • Lighting shall be diverted away from any native habitat and shall consist of low-sodium or similar lighting equipped with shields to focus light downward onto the appropriate subject. • Unless authorized as part of construction, existing roads or disturbed areas shall be used to access the project sites. • Topsoil from the project sites shall be stockpiled within the construction sites where feasible. If topsoil from off-site construction must be stockpiled, it shall be stockpiled in disturbed areas. Stockpile areas shall be delineated on the grading plans and reviewed by a qualified biologist. • On-site staging areas shall be used where feasible. Staging areas shall be delineated on the grading plans and reviewed by a qualified biologist. If staging areas outside the construction footprint are used, then they shall be surveyed for biological resources prior

TABLE 2-5 (*Continued*)

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
	to their use. • The use of native plants to the greatest extent feasible in the landscape areas adjacent to mitigation or open space areas (including wetland and riparian areas) will be considered during project-level review of applicable project components of the Wastewater Master Plan Update. The lead agencies will not plant, seed, otherwise introduce invasive exotic plant species to the landscaped areas adjacent to and/or near the mitigation/open space area or wetland and riparian areas. Exotic plant species not be used include those species listed on Lists A and B of the California Exotic Pest Plant Council's "Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999." This list includes such species as pepper trees, pampas grass, fountain grass, ice plant, myoporum, black locust, and capeweed.
	All segments of the Master Plan Update will be constructed in accordance with Uniform Building Code Standards and accepted standards for public works construction. These standards pertain to protection against seismic activity, settlement, liquefaction, and other integrity issues.
Hazards and Hazardous Materials	• Fire safety information shall be disseminated to construction crews during regular safety meetings. Fire management techniques shall be applied during project construction as deemed necessary by the lead agency and depending on-site vegetation and vegetation of surrounding areas. • A brush management plan will be incorporated during project construction by the City or its contractors, as necessary. Construction within areas of dense foliage during dry conditions will be avoided, when feasible. In cases where avoidance is not feasible, necessary brush fire prevention and management practices will be incorporated. Specifics of the brush management program will be determined as site plans for the project are finalized. • A site-specific record search for the locations and type of hazardous materials will be conducted during final design of the individual project components. • The use, storage, transportation, and disposal of chemicals and use of petroleum fuel during construction and operation of the project will be regulated by the County Department of Hazardous Waste Management, and will be conducted according to all applicable state, federal and local regulations. • In order to ensure that the project does not cause a significant hazard to the public or the environment through release of or transport of hazardous materials during construction and operation, the City or its contractors, and the Districts, will implement the following project design features: – Pipelines of the project components would be constructed with polyvinyl chloride (PVC) pipe, or other material, which is highly resistant to rupture. – Pump stations included as part of the project, and stations that will service the proposed project shall be designed or constructed with safety features, including an emergency generator in case of electrical failure, and sufficient sewage detainment capacity in the event of generator and/or pump mechanism failure to allow time for repair and/or emergency conveyance of the sewage. Should emergency leaks or spills occur, the Sewer Prevention and Response Plan for both Districts will be implemented. • Prior to construction, the City shall prepare a traffic control plan in accordance with the cities of Carlsbad, Oceanside, and San Marcos traffic control guidelines that will specifically address construction traffic during construction of project components within the public right-of-ways of the affected jurisdiction(s). The traffic control plan will include signage and flagmen when necessary to allow the heavy equipment to utilize residential

TABLE 2-5 (*Continued*)

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
	streets. The traffic control plan will also include provisions for coordinating with local school hours and emergency service providers regarding construction times.
Hydrology and Water Quality	• The construction contractor, in consultation with the lead agency, shall be responsible for filing all required notices with the Regional Water Quality Control Board (RWQCB), preparing the Storm Water Pollution Prevention Plan (SWPPP), and implementing required Best Management Practices (BMPs). The construction manager shall be responsible for monitoring and maintenance of BMPs until the construction area has been permanently stabilized to ensure that they are working properly. • BMPs shall include both sediment control measures to prevent rainfall from contacting exposed soil surfaces, and erosion control measures (*e.g.*, gravel bags) to prevent eroded material from leaving construction areas, especially from flat graded areas, in accordance with the required erosion control plan. • A construction spill contingency plan shall be prepared in accordance with County Department of Environmental Health regulations and retained on site by the construction manager. If soil is contaminated by a spill, the soil shall be properly removed and transported to a legal disposal site. • If groundwater is encountered and dewatering is required, then the groundwater shall be disposed of by pumping to the sanitary sewer system or discharging to the storm drain system according to the conditions of the appropriate discharge permit. • The lead agencies will consider using pervious or semi-pervious surfaces where possible to reduce the increase in the velocity of peak flows. • For all potential impacts to natural drainages (i.e., pre-development hydrology), BMPs on-site shall be used to fully mitigate for project-related contaminants in the surface flows prior to their discharge to streams.
Noise	• Heavy equipment shall be repaired at sites as far as practical from nearby residences. • Construction equipment, including vehicles, generators and compressors, shall be maintained in proper operating condition and shall be equipped with manufacturers' standard noise control devices or better (*e.g.*, mufflers, acoustical lagging, and/or engine enclosures). • Construction work, including on-site equipment maintenance and repair, shall be limited to the hours specified in the noise ordinance of the affected jurisdiction. • Electrical power shall be supplied from commercial power supply, wherever feasible, in order to avoid or minimize the use of engine-driven generators. • Staging areas for construction equipment shall be located as far as practicable from residences. • Operating equipment shall be designed to comply with all applicable local, state, and federal noise regulations. • If lighted traffic control devices are to be located within 500 feet of residences, the devices shall be powered by batteries, solar power, or similar sources, and not by an internal combustion engine. • The Districts or their construction contractors shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners within 300 feet of the alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more that 7 days occur, an additional notice shall be made, either in person or by mail. The Districts shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur. • The Districts shall identify and provide a public liaison person before and during

TABLE 2-5 (*Continued*)

	STANDARD DESIGN FEATURES AND CONSTRUCTION MEASURES
	construction to respond to concerns of neighboring residents about noise and other construction disturbance. The Districts shall also establish a program for receiving questions or complaints during construction and develop procedures for responding to callers. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public in accordance with the information above.
Transportation/Traffic	• Prior to construction, the City shall prepare a traffic control plan in accordance with the City of Carlsbad traffic control guidelines that will specifically address construction traffic during construction of project components within the public right-of-ways of the affected jurisdiction. The traffic control plan will include signage and flagmen when necessary to allow the heavy equipment to utilize residential streets. The traffic control plan will also include provisions for coordinating with local school hours and emergency service providers regarding construction times (additional specifics are found in *Section 4.10.4* of the EIR).

Construction would be performed by qualified contractors selected as part of competitive bidding and award procedures practiced by the City. Contract documents, plans, and specifications would incorporate stipulations regarding standard City requirements and acceptable construction practices including, but not limited to, fill materials, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, traffic circulation, public safety, dust control, and noise generation.

2.4.4 Construction Schedule

Construction of the proposed plans is varied, depending on the timing for individual projects. A phased CIP has been developed to plan for future water and sewer system improvements. In general, construction would proceed in three individual phases, with the final phase being completed in the projected buildout year of 2020.

In the first phase, improvements to the existing water and sewer distribution system will be implemented, including water pipeline projects recommended to improve fire flows and meet redundancy criteria and lift station improvements. Replacement of older water mains and additional capacity improvements are also included.

The second phase involves emergency water supply projects, and improvements required to supply the entire distribution system from Maerkle Dam. Included is a new pump station to supply the eastern parts of the City and capacity improvements at the

existing Maerkle Pump Station. Also included are transmission main improvements that will be installed with the construction of Cannon Road and College Boulevard, and a transmission main (Water Master Plan component 15).

Phase III would consist of improvements recommended for the final CIP phase including construction of additional water and sewer pipelines, pressure reducing stations, and operational and emergency storage facilities. Capacity improvements are recommended that would be constructed with commercial/industrial development in various areas throughout the City.

These three CIP phases should provide the Districts with a long range planning tool to keep up with growth and provide for expansion of the water distribution system in an orderly manner. It is noted that phasing for recommended improvement projects may be accelerated or deferred as required to account for changes in development schedules, availability of land or rights-of-way for construction, funding limitations, and other considerations that cannot be predicted at this time.

2.5 APPROVALS REQUIRED AND INTENDED USES OF THE EIR

The decision to implement the Master Plans is within the purview of the City of Carlsbad City Council, which acts as the decision-making body for both lead agencies. As described in *Section 1.2*, the Carlsbad City Council will use the information included in this Program EIR to consider potential impacts to the physical environment associated with the project when making the decision to implement the proposed project.

The RWQCB will use the EIR and supporting documentation in its decision regarding issuance of water quality permits, such as a National Pollutant Discharge Elimination System (NPDES) General Construction Activity Storm Water Permit, Clean Water Act 401 Water Quality Certification, and/or a General Dewatering Permit.

If federally listed species are affected by the project, the U.S. Fish and Wildlife Service (USFWS) will use the EIR and supporting documentation in its decision regarding issuance of relevant permits, such as take permits under Section 10 of the Endangered Species Act.

Should wetlands or waters of the U.S. be affected, the U.S. Army Corps of Engineers (USACOE) will review the EIR and supporting documentation in its decision regarding issuance of relevant permits, such as a 404 or nationwide permit.

The California Department of Fish and Game (CDFG) will use the EIR and supporting documentation in its decision regarding issuance of a Section 1601 or 1603 Streambed Alteration Agreement under the State Endangered Species Act.

The Cities of Carlsbad, Oceanside, and San Marcos, will use the EIR and supporting documentation in their respective decisions regarding issuance of encroachment permits for construction within each jurisdiction's right-of-way.

The Cities of Carlsbad and Oceanside, and the California Coastal Commission, will use the EIR and supporting documentation in their respective decisions regarding issuance of Coastal Development Permits (CDPs) for any portion of the project lying within their coastal zone jurisdictions.

For construction within existing San Diego Gas & Electric (SDGE) easements, SDGE would use the EIR and supporting documentation in its decision regarding issuance of encroachment permits.